Creating a Curriculum for Training Health Profession Faculty Leaders

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Abstract

Objectives: An interprofessional, collaborative group of educators, patient safety officers, and Federal program directors teamed up to create an integrated, patient safety-centered curriculum for the education of physicians, nurses, and other health professional faculty leaders. **Methods:** Executive and advisory committees became a collaborative team, surveying and cataloguing existing educational tools and materials. They synthesized materials about patient safety and interprofessional collaboration to provide faculty with tools for assessing and improving their current teaching practices that influence patient safety. **Results:** The curriculum consists of a modular handbook and linked train-the-trainer workshop exercises on the key theme: improving the culture of safety through improving interprofessional collaboration. Five topics structure the curriculum: Patient Safety Basics, Developing Academic Leadership, Improving the Culture of Practice, Changing the Response to Error, and Applied Principles of Interprofessional Teaching and Learning. **Conclusions:** One hundred thirty-seven faculty and staff educators from 9 States, representing 14 health professions, have used the curriculum through the workshop mode. Based on their estimates of the number of health professionals and students in their spheres of influence, they have the potential to influence more than 10,000 individuals in improving patient safety through interprofessional collaboration.

Introduction

The Faculty Leadership in Interprofessional Education to Promote Patient Safety (FLIEPPS) project is a cooperative agreement between (1) the University of Washington, and (2) the Division of Medicine and Dentistry and the Division of Nursing of the Bureau of Health Professions (BHPr), Health Resources Services Administration (HRSA) of the U.S. Department of Health and Human Services (DHHS). The objective of the project is to create an integrated, patient safety-oriented curriculum for the collaborative education of physicians, nurses, and other health professionals. Its goal is to promote institutional improvements in the areas of patient safety and interprofessional education through the development of faculty leaders. FLIEPPS is also an interprofessional team of educators working to develop, pilot test, evaluate, and disseminate an integrated, patient-centered curriculum focused on patient safety. FLIEPPS provides tools for assessing and improving teaching practices that influence patient care using the current best practices in interprofessional education and patient safety. Using a train-the-trainer approach, FLIEPPS is developing leaders who can influence

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educational change in the service of patient safety at their schools, colleges, or health care institutions.

In this paper, we present our FLIEPPS curriculum and data assessing the influence of its components. We also provide workshop participant profiles and examples of their projects in the areas of patient safety and interprofessional education. Particular emphasis is placed on presenting the FLIEPPS educational materials and describing successful methods for their use and dissemination.

Interprofessional collaboration is central to patient safety

Interprofessional collaboration is key to the 21st-century health care paradigm whereby teams function effectively to optimize safety and to deliver high quality care.[1–3] As envisioned in *Crossing the Quality Chasm*, health care practitioners in the new system will "understand the advantage of high levels of cooperation, coordination, and standardization to guarantee excellence, continuity, and reliability."[1] Ideally, collaboration allows practitioners to leverage their differences in expertise and perspectives to achieve the following: meet the needs of an increasing portion of the population (now about 40 percent) who have one or more chronic illnesses; coordinate and respond to multiple patient needs; improve patient safety; keep up with the demands of new technology; respond to the demands of payers and clinicians outside of medicine; and, in some cases, deliver care across settings.[1, 2, 4] There is growing evidence that interprofessional teams enhance health care quality and lower costs.[5–7] In geriatrics, interprofessional teams have demonstrated favorable patient outcomes, including (1) reduced loss of functional ability, (2) reduced health-related restriction in daily activities, (3) reduced use of home health services, (4) reduced rate of depression, and (5) improved caregiver general health.[8–15] Similarly, a complementary team approach to managing patients with hypertension and diabetes resulted in improved clinical outcomes, increased patient satisfaction with both care and quality of life, and only modest incremental cost.[16] The use of interprofessional care teams has also led to better patient outcomes in the management of stroke and congestive heart failure.[17–19] Collaboration among health professionals has been associated positively with patient outcomes in the operating room (OR), the emergency room (ER), and the intensive care unit (ICU).[20–22]

A number of patient safety initiatives involve team-based practices founded on conceptual/behavioral models adopted from high-risk industries with exemplary safety records. These include processes such as root-cause analysis (RCA); failure modes and effects analysis (FMEA); plan, do, study, and act cycles (PDSA) for quality improvement; the use of aviation-style checklists; and the incorporation of human factors science and high-reliability organization theory. Furthermore, successful implementation of patient safety practices frequently depends upon changing the organizational response to error from one in which an individual is singled out for blame and training to one in which system-level breakdowns are investigated. This represents a significant culture shift, which can be prompted by tragic events (as in the case of Boston's Dana-Farber Cancer Institute [DFCI]) or proactive innovation. DFCI emerged from the

tragedy of a patient's death from chemotherapy overdose to become a national leader in the patient safety arena. A key feature of DFCI's transformed culture was the institutionalization of root-cause analysis, which brings patients, families, and practitioners from multiple professions together to search for the multiple contributory factors at the root of an adverse outcome or near miss. Such inclusive RCAs shape and are shaped by cultures that value open communication about errors and safety. Such cultures recognize that there is much to be gained by negotiating rather than discounting differences in event interpretation that arise among individual team members with different values, needs, and expectations.[23]

Innovative efforts to proactively prevent tragic patient safety errors can also result in learning and culture change. A team-based collaborative rounds process implemented at Concord Hospital (Concord, New Hampshire) won the John M. Eisenberg Patient Safety Award for systems innovation. The hospital restructured its clinical teamwork on the basis of human factors science, aviation safety, and high-reliability organization theory. Cardiac surgery care teams conducted daily rounds at the patient's bedside to share information and to develop a care plan in conjunction with the patient and family. A forum for follow-up discussion of team goals was also created in the form of biweekly system rounds. Following implementation of these processes, the mortality rate of the hospital's cardiac surgery patients declined significantly and provider and patient satisfaction increased.[24] At York Central Hospital, (York, Ontario, Canada) a multiprofessional mortality review process was successfully implemented, resulting in continuous quality improvements at the system and provider levels.[25] Executive WalkRounds have also been successful in educating leadership and frontline staff in patient safety concepts as well as in fostering cultural changes leading to open discussion of adverse events and an improved rate of safety-based changes.[26]

Lack of interprofessional education related to patient safety

Groups of health care personnel often come together to care for patients. Though these groups look like "teams," they may or may not have earned true team status by demonstrating teamwork competencies.[27] Communication difficulties related to status asymmetries, concerns with hierarchy, conflicting and ambiguous roles, interpersonal power, and conflict arise within these team-like relationships and are associated with medical mishaps.[28] In speaking to a medical audience about Institute of Medicine (IOM) recommendations, Shine suggested that medical schools educate their students in situations where they can be taught in conjunction with nursing students and other kinds of health care professionals (including pharmacy students) so that they learn how to problem-solve jointly. "The educational process needs to reflect team functioning and orientation to micro- and macrosystems of care to a much greater extent than it has."[3] It is notable that topics such as interpersonal influence, group dynamics, organizational behavior, negotiation, or conflict resolution are rarely integrated

into health care curricula.[29] Interprofessional education has not been easy to accomplish, in spite of a long history of trying.[6]

Historically, the education and postgraduate training of professionals in the health sciences have occurred within the infrastructures of individual undergraduate, graduate, and professional programs. While there have been several efforts in the past to provide team-based education, only the recent complexity of interventions, economic incentives, and bewildering network of services that sometimes passes for a "system" have provided adequate incentive to create curricula and leadership for real interprofessional care.[30] A small number of programs in academic health centers have begun to educate health professionals together early in their education. While the size of the institutions and the breadth of programs vary considerably, the challenges and solutions described in publications from these programs are similar enough to form the basis for developing a workable curriculum for faculty development in interprofessional education and practice that is generalizable beyond the individual programs.

The need for curriculum development and experiential education for faculty leaders across the disciplines is well outlined in the report of the September 2000 joint meeting of the Council on Graduate Medical Education (COGME) and the National Advisory Council on Nurse Education and Practice (NACNEP).[31] Similar needs for interprofessional education as part of the required curricula for students as well as for faculty development were documented in a Macy Foundation meeting of Deans of Schools of Nursing and Medicine[32] and in the reports of the Institute for Healthcare Improvement interdisciplinary improvement collaboratives.[33] The IOM's Committee on Quality further outlined compelling national needs for leadership to develop interprofessional programs in the area of patient safety.[32, 34] The confluence of need and will to improve the situation led the Bureau of Health Professions to issue a request for applications to create a nationally disseminated curriculum in interdisciplinary leadership to promote patient safety. The Center for Health Sciences Interprofessional Education at the University of Washington received a 3-year cooperative agreement from the HRSA Division of Medicine and Dentistry and Division of Nursing to develop and disseminate a curriculum to achieve these aims.

Approach

We built on our experiences in creating the Health Sciences Partnerships in Interprofessional Clinical Education (HSPICE) and the Center for Health Sciences Interprofessional Education and Research.[35] Faculty involved in both of these endeavors had been working together for several years to provide local leadership in interprofessional collaborative education and were ready to apply this approach to promote patient safety. The goal of this cooperative agreement was to promote educational institutional improvements in the areas of patient safety and interprofessional education through the development of faculty leaders. Our specific objectives were to (1) develop a curriculum for training faculty in the

skills of interprofessional leadership and teaching, (2) develop a curriculum designed to improve patient safety, and (3) integrate these curricula in a manner that would allow them to be disseminated nationally.

Process of curriculum development

The curriculum development process created an interprofessional team within our working group. We came together as academic health center educators, patient safety officers, and federal program directors and worked collaboratively to develop, pilot test, evaluate, and disseminate an integrated, patient-centered curriculum focused on patient safety. We used a variety of strategies, including rapid-cycle planning, simulations to analyze and improve our group processes, and multiple task groups to accomplish a wide range of trial and permanent curriculum elements involving interprofessional education and patient safety content and process. We consciously encompassed four elements of successful system change—strategic, structural, cultural, and technical—as identified by Shortell and colleagues.[36]

At the *strategic* level, we identified and acted on issues considered important to both our funding agency and the presumed target audiences—educators of health professionals. *Structurally* we created the FLIEPPS Executive and Advisory Committees within the larger Center for Health Sciences Interprofessional Education. These structural entities served to coordinate efforts and to interface with the organizational systems that support quality initiatives in clinical environments. The inclusion of the executive group of key academic and clinical leaders for patient safety from the two academic medical center hospitals (Harborview Medical Center and University of Washington Medical Center) was aimed at capitalizing on these structural elements. The *cultural* level for system change refers to the underlying beliefs, norms, and behavior that support or inhibit educator and clinician behavioral change. The *technical* level refers to knowledge and skill development in both interprofessional work and patient safety. The core of the Executive Committee in the FLIEPPS initiative had been working collaboratively for 4 years with the clinical leaders in care delivery and education, both within and beyond the HSPICE initiative. Thus, they were prepared to address all levels in their work with HRSA and the Advisory Committee. These elements are also incorporated into the approaches to curriculum and process described in this section.

We quickly verified that there was no existing curriculum that could be packaged and used to meet the goals of this project. Therefore, our first task was to survey and catalogue existing materials in the areas deemed core to the two curricula by our executive and advisory groups. We surveyed existing materials from the IOM quality series, the National Patient Safety Foundation, the Institute for Safe Medication Practices, and the Institute for Healthcare Improvement, among others. We are particularly indebted to John Gosbee, who generously shared many materials and approaches being used by the Department of Veterans Affairs (VA) patient safety group.[37–39]

Project structure

We used the human resources of our Executive Committee, external Advisory Committee, and HRSA program officers in a series of teleconferences, in-person workshops, and small task groups to locate these materials, select the core elements needed for our curriculum, and bring it all together in a handbook. The handbook was then linked to readings and an interactive workshop.

The Executive Committee consisted of the executive group of the Center for Health Sciences Interprofessional Education; patient safety leaders from the two university hospitals; administrative leaders for continuing nursing and medical education; and students from medicine, nursing, and bioinformatics. This group represented physicians, nurses, pharmacists, social workers, information specialists, educators, and students. Their combined experience encompassed leadership of faculty development programs, curriculum development, interprofessional education, patient safety improvement, and active learning. This entire group met monthly during the first year to review and propose curriculum content and structure and to direct the overall project. In addition, task groups met several times to develop written and workshop materials for the specific areas identified by the larger Executive and Advisory meetings.

The Advisory Committee was composed of local and external physicians, nurses, pharmacists, hospital patient safety officers, organizational leaders, and educators. Their combined experience encompassed leadership of faculty development programs, curriculum development, interdisciplinary education, and patient safety improvement. This group provided consultation regarding existing patient safety educational endeavors, additional local experts in patient safety and interprofessional education, and potential venues for dissemination. Together with the Executive Committee and the program officers from the funding agency, the Advisory Committee reviewed the current best practice standards relevant to interprofessional education, train-the-trainers programs, curricula for enhancing patient safety, and leadership training for faculty in nursing and medicine.

Using videoconferencing and in-person meetings, the combined Executive and Advisory Committees developed and endorsed the collaborative curriculum, determined relevant methods for a train-the-trainers program, proposed and acted as faculty for teaching curricula, proposed the plan for determining outcomes of the program and the evaluation plan for the program, and recommended and monitored the plan for continuous quality improvement.

Curriculum structure

Early on we identified the key theme for the structure of the curriculum: *improving the culture of safety through improving interprofessional collaboration*. Based on our task group work, the Executive and Advisory Committees identified five topics that structure the curriculum:

- Patient Safety Basics
- Developing Academic Leadership

- Improving the Culture of Practice

- Changing the Response to Error

- Applied Principles of Interprofessional Teaching and Learning

Content was organized within these five major topics using a handbook of modules. Each module, written by members of the Executive Committee, contains objectives, detailed content outlines, terminology, suggested readings, and interactive educational activities. Interactive and reflective exercises are linked to each module and can be used in conjunction with the in-person or Internet workshops.

Users of the handbook will find content that enables discussion of the basic principles and tenets of patient safety, the scope of the problem of errors in health care, the systems approach to patient safety, definitions of common patient safety terminology, facilitators of and barriers to promoting a culture of patient safety, attributes of successful academic leaders, and strategies for incorporating interprofessional learning and patient safety into their home curriculum. Furthermore, users will find content useful in identifying aspects of organizational culture that are critical to patient safety, evaluating the organizational culture related to patient safety in their own environment, defining and using tools of continuous quality improvement in promoting patient safety, using tools and strategies such as root-cause analysis, and managing crew resources in relation to teaching and learning about patient safety. Other specific tools include approaches to error reporting and disclosing errors, the inclusion of patients and families in the culture of safety, and strategies to use active learning exercises such as case studies role-playing and reflective practice in the areas of interprofessional collaboration and patient safety.

The experiential and reflective learning exercises developed are in workshop form and build on the content modules. Furthermore, they emphasize the key processes necessary to work across professional disciplines. Many emphasize the processes of cross-cultural communication used in defining and delineating the professional cultures and languages of medicine, nursing, and other health professions central to improving patient safety. We see these materials as substantially contributing to achieving the competencies for all health professions as outlined by the Health Professions Education Summit: deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics.[40]

Products

Our curricular approach in the proposed project was to integrate a culture of safety with a culture of interprofessional collaboration. The curriculum is an integrated package, or "toolkit," consisting of a modular handbook linked to experiential and reflective exercises that can be used with learners in a variety of settings.

Overall objectives for users of the toolkit are to:

- Assess the culture of clinical practice that affects the users and their students.

- Identify opportunities for improving the culture of clinical practice.

- Write an action plan for implementing and evaluating an interprofessional patient safety educational experience at their own institutions.

- Educate students and other faculty about the principles and tenets of patient safety.

- Take a leadership role in patient safety and interprofessional education activities at their home institutions.
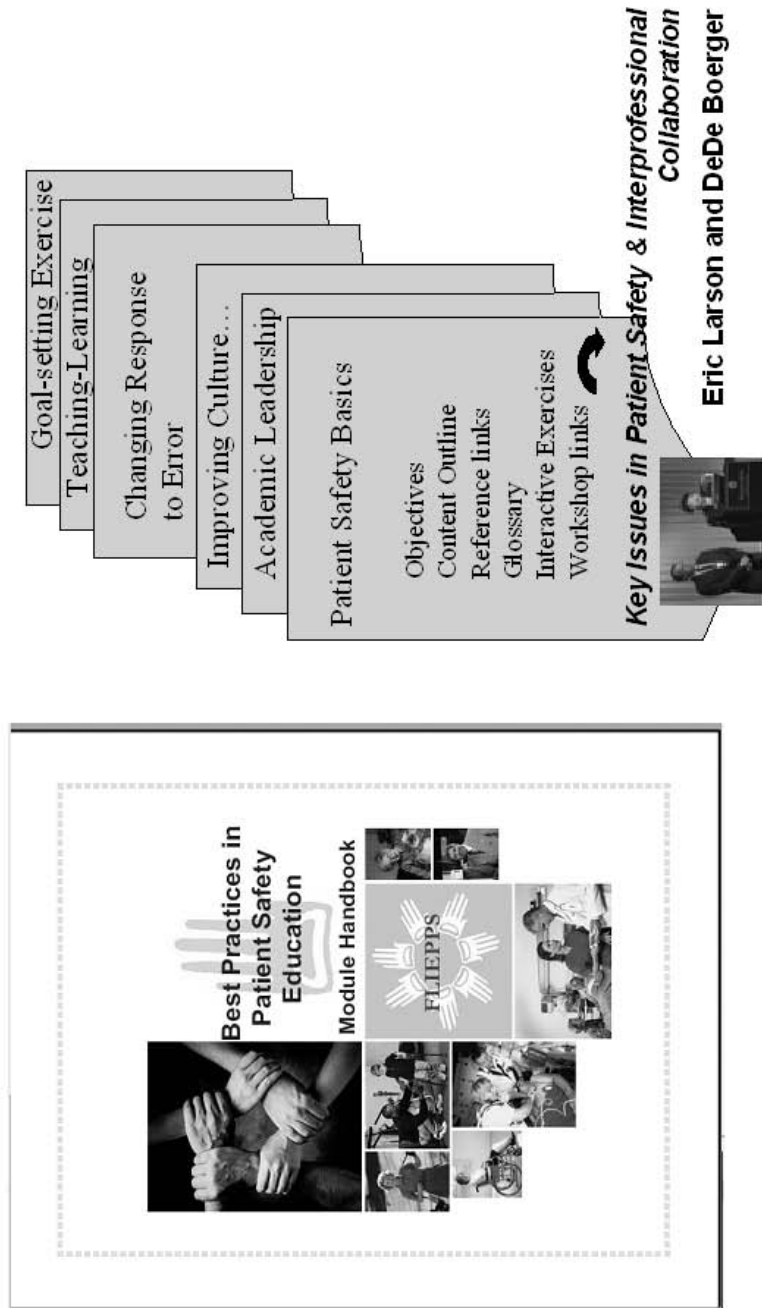
The specific objectives and assessment activities in each module in the handbook are subsumed under these overarching objectives.

The curriculum can be accessed either through the traditional venue of a 2-day workshop or via the World Wide Web (http://www.interprofessional. washington.edu/fliepps/default.asp). We also have developed mini-workshops that provide faculty with a taste of the materials and a "train-the-trainer-of-the-trainers" approach. Continuing education credits are granted in each relevant profession as a form of certification. An example of the workbook, workshop, and exercise linkage is provided in Figure 1.

Users, whether accessing the curriculum through a workshop or online, create a curriculum project to apply the materials that are specific to their own learning community. Examples of these applications include development of a simulation for difficult obstetrical care, educational modules for new residents in pediatrics, use of "good catch" forms to encourage reporting of near misses, and integration of patient safety through all courses in a physician assistant curriculum. The application projects have been designed by individual attendees, teams from within a particular profession, and interprofessional teams who attend together. The flexibility of the curriculum allows all these approaches.

Overall program evaluation has several components. It progresses from counting the number and professional mix of participants to evaluating the interprofessional educational activities in which they subsequently engage, the frequency of patient safety as content focus of those activities, and the impact of program participants in interprofessional and patient safety improvement initiatives.

Figure 1. Example of a modular handbook with curriculum links

Goal-setting Exercise
Teaching-Learning
Changing Response to Error
Improving Culture…
Academic Leadership
Patient Safety Basics

Objectives
Content Outline
Reference links
Glossary
Interactive Exercises
Workshop links

Key Issues in Patient Safety & Interprofessional Collaboration

Eric Larson and DeDe Boerger

Best Practices in Patient Safety Education

Module Handbook

FLIEPPS

Conclusions

As of early 2004, more than 130 faculty and staff educators from 9 States, representing 14 health professions, have used the curriculum through the workshop mode (Table 1). Approximately two-thirds have been from the nursing profession, identified either as nursing or as quality-improvement staff. This reflects the extent to which nursing is charged with quality improvement education in hospitals. The remainder have been physicians (N= 30), pharmacists (N = 11), physician assistants, public health practitioners, rehabilitation professionals (physical therapists, occupational therapists), social workers, health educators, information specialists, dentists, and laboratory science specialists. Only nurses worked primarily in rural settings, while physician attendees were from urban areas. The groups whose practice was primarily in hospitals included nursing, rehabilitation, and laboratory science professionals.

Participants estimated they educate from 2 to 1,000 health professionals yearly in patient safety and collaborative issues. Multiplying this range by the number of participants in the train-the-trainer workshops, we conclude they have the potential to influence from 274 to more than 10,000 individuals nationally. The first 13 respondents to our follow-up survey have trained 416 faculty, staff, and students in patient safety issues in the year following their workshop attendance.

Table 1. Selected characteristics of participants in FLIEPPS curriculum workshops

Professions	Number	Work with medically underserved	Primarily ambulatory care	Primarily rural care	Primarily hospital care
Nursing	62	56	7	5	51
Physician	30	16	13	0	0
Pharmacy	11	3	2	0	0
Quality assurance	6	0	2	0	4
Public health	4	2	0	0	0
Physician asst.	4	3	0	0	0
Laboratory science	3	0	0	0	3
Social work	3	2	1	0	0
Dentistry	2	0	1	0	0
Health information	2	0	2	0	0
Medical education	2	0	0	0	0
Rehab	2	0	0	0	2
Clinical psychology	1	0	0	0	1
Health education	1	0	0	0	0
Total	133	82	28	5	61

Participants also have strong potential to influence patient safety within their own organizations through their educational activities. On average, participants perceived that they influence about 42 percent of their organization's overall function and about 38 percent of interprofessional collaboration. On average, they spend about 50 percent of their time in activities related to patient safety and harm reduction. However, they also rated their own knowledge as being about half of that found in the domain of patient safety. Presumably this was a major motivator to attend the workshops and to use the curriculum.

The curriculum materials and workshops have been evaluated quite favorably, receiving overall ratings at the most recent workshop of 5.4 on a scale ranging from 1 (very poor) to 6 (excellent). The ratings of the workshop, individual speakers, and suggestions for improvement have been used to improve each iteration of the overall curriculum. The final evaluation is determined by the extent to which participants implement their action plans and achieve some change in patient safety through interprofessional collaboration within their own institutions. We are still in the process of collecting that information for our earliest participants. Some of these early participants have endeavored to infuse patient safety into every course in a health profession curriculum and are making steady progress toward that goal. Others have developed a stand-alone course in medication safety, and are now seeking to expand that to other health profession schools in their university. Still others have developed patient safety fairs that include both health professionals and consumers.

FLIEPPS has achieved its initial goals of developing and integrating curricula to promote patient safety and to develop leadership in interprofessional education. The curriculum products have been developed, tested in local and national workshops, and made available for dissemination online. Although physician recruitment has been challenging, we have exceeded our goals for number of participants. Continued dissemination and marketing strategies are in place to reach this audience and to enhance the virtual interprofessional network that is emerging from the FLIEPPS project.

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